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ABSTRACT

Part of a series of instructor training modules on related subjects instruction for apprentices, this booklet deals with presenting information to apprentices. The first chapter consists of an outline of the nature and scope of the instructor training modules as well as a self-assessment pretest. Covered in the module are planning to present information in the related subjects experience, introducing lessons as well as providing clear expectations and directions for apprentice activities and outcomes, varying methods for presenting information, using instructional aids in presenting information, and modifying instruction based upon learner feedback. Each chapter contains some or all of the following: an introduction and objectives, a discussion of when and why to use the given skill, guidelines for using the skill, an example, additional information, and self-test exercises. Appended to the booklet are answers to the self-test exercises, a posttest, and answers to the posttest. (MN)

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ED227297

# PRESENTING INFORMATION

*Instructor Training Module #5*

Joseph T. Nerden
Eric Rice

CE035330

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### GLOSSARY

The words on this list are used in this booklet. Please review the terms and learn the definitions. The meanings of the words as used in the text may not be the form of the word with which you are familiar.

**Word/Terms**

1. *Cue and cueing* A signal or sign that indicates the nature of something to occur; giving a cue.
2. *Daily Lesson Plan* A plan which summarizes the instructional activities for a day's lesson.
3. *Establishing an Apperceptive Base* Creating a readyness to learn by associating new knowledge with information previously mastered.
4. *Instructional Aids* Tools for presenting information that do not rely on your offering the information verbally.
5. *Learning Environment* The setting where you provide related instruction.
6. *Motivation* The stimulation of learner behavior.
7. *Paraphrasing* Stating in one's own words.
8. *Plan for Instruction* A summary of the instructional program which presents content areas, performance objectives, sequence, types of instructional activities and evaluation times.

# 1. How to Use This Booklet

## What Is The Series About?

Related subjects instruction is an essential part of every apprenticeship program. It is the program component through which apprentices are taught the background theory and range of application of associated technical subjects such as mathematics, science and safety. Related instruction usually takes place in a classroom, after the regular work is over. Most frequently, related instruction is taught by a skilled tradesperson or craftworker. For the tradesperson or craftworker to be an effective trainer, he or she must not only know their trade skill, but also must use teaching skills appropriate for conveying that information to apprentices. This series of materials is written to train related subjects instructors in the critical teaching skills necessary to perform their jobs effectively. The titles of the booklets in the series are:

1. *Introduction to Related Subjects Instruction and Inservice Training Materials*
2. *Planning the Apprenticeship Program*
3. *Planning Related Subjects Instruction*
4. *Developing Instructional Materials for Apprentices*
5. *Presenting Information to Apprentices*
6. *Directing Learning Activities for Instruction*
7. *Providing for Individual Learner Needs*
8. *Controlling Instructional Settings*
9. *Evaluating Apprentice Performance*
10. *Communicating with Apprentices*

The first booklet introduces the series, describes the content of each booklet, and provides an overview of apprenticeship and of adult learners. The second booklet describes how to plan an apprenticeship program and may be used by related instructors, sponsors or service agencies. Each of the other eight booklets deals with a set of training skills judged by a panel of experts on apprenticeship to be critical to working effectively as a related subjects instructor.

## What Is This Booklet About?

The information for the apprentice instructor in this booklet is about the methods and procedures of presenting information to apprentices in related subjects instruction. Presenting information is one of the major responsibilities of the apprentice instructor, since it is the principal means for conveying the technical information, auxiliary information and other pertinent information required on the job by the apprentice. To present information effectively, you must perform several very important skills associated with the task of transmitting information to the apprentices. This booklet provides instruction for you in five of the most important of those skills:

1. Plan to present information in the related subjects' experience;
2. Introduce lessons and provide clear expectations and directions for apprentice activity and outcomes;
3. Vary the methods of presenting information (such as lecture, discussion, individualized instruction, role play and others);
4. Use instructional aids in the presentation of related subjects information; and
5. Modify the instruction, based upon feedback from apprentices.

## What Must I Do to Complete My Work in This Booklet?

Working your way through this booklet will require you to read the text, to answer the questions, to perform the exercises, and to complete the pre- and post-assessment instruments. Expect to spend about five hours working through the materials. The only resources you need to complete your work in this booklet are: (1) a copy of the booklet; (2) a pencil or pen; (3) about two hours of time; and (4) recollection of past related instruction experiences.

The materials are written in a self-instructional, programmed format. You may work through the text, examples and questions at your own pace and leisure; you need not complete your work in the booklet at one sitting.

Each chapter in the booklet is devoted to a single skill. The general format of the chapters is similar, with the following parts:

1. An *introduction* describing the skill and the instructional objectives for that skill.
2. *What* is, *when* and *why* to use the skill.
3. *Step-by-step directions* for how to perform the skill.
4. An *example* of how the skill is used in related instruction.

5. A *self-test exercise* to apply the information about the skill.
6. Additional *sources of information.*

This booklet concludes with an appendix that contains the answers to the self-test exercises from each chapter and the posttest.

Your activities in working through this booklet will include, in order, the following things:

- Complete the self-assessment;
- Read and consider in detail the introduction and objectives for each skill;
- Read and study the text, examples and illustrations provided for each skill;
- Complete the self-test exercise for chapter and compare your answers with those provided in the appendix;
- If you complete the exercise as directed continue your work in the booklet; if you fail to answer the questions correctly, repeat your work in the chapter under consideration; and
- At the conclusion of the booklet, complete the post-test for the unit. Check your answers against those provided. If you exceed the criteria, continue your work in the next booklet; if you fail to demonstrate mastery, repeat portions of this booklet as needed.

## How Much Do I Know About The Subject Before I Begin?

The self-assessment will assist you to focus on competency areas associated with presenting information. Read each competency statement listed in Figure 1 and assess your level of knowledge about and your level of skill in performing that task. Knowledge means what you know about the subject while skill means your experience in successfully performing the task. Circle the number that best describes your level of knowledge and skill. Competencies where your ratings are poor or fair are those that you should concentrate on. Pay particular attention to the chapters which deal with those competencies.

## Figure 1 Presenting Information to Apprentices Self Assessment

| Chapter in Booklet | Competencies | | Rating | | | |
|---|---|---|---|---|---|---|
| | | | Poor | Fair | Good | Excellent |
| 2. Skill: Plan to present information in the related subjects experience | 1. Determine appropriateness of information | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| | 2. Determine how much information to present | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| | 3. List principal points to be taught | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| | 4. Consider alternative instructional procedures | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| 3. Skill: Introduce lesson and provide clear expectations and directions | 5. Explain object of lesson | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| | 6. Provide clear directions | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| | 7. Make certain directions are understood | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| 4. Skill: Vary methods for presenting information | 8. Utilize different methods of instruction | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| | 9. Show applications of information | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| | 10. Summarize key points | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| 5. Skill: Use instructional aids in presenting information | 11. Review instructional aids | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| | 12. Prepare instructional aids | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| | 13. Be familiar with uses of instructional aids | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| 6. Skill: Modify instruction based on learner feedback | 14. Obtain information for use in instructional modification | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |
| | 15. Review feedback from apprentices | Knowledge | 1 | 2 | 3 | 4 |
| | | Skill | 1 | 2 | 3 | 4 |

# 2. Skill: Plan To Present Information In The Related Subjects Experience

## Introduction And Objectives

In meeting the responsibility of providing related subjects instruction, you as a related subjects instructor must convey information in the instructional setting. In this regard, it is important from the beginning that you be aware of the particular needs of apprentices to acquire specific knowledge and skills and that you have practical ideas about how the knowledge and skills can be applied to on-the-job experiences. This requires (1) that you be familiar with the subject matter under consideration such as science, mathematics, sketching and blueprint reading, and (2) that you be able to draw the relationships and implications of the subject matter to the work experiences, expectations and requirements of the actual job as a journeyman. You must deal with both "the know how" and the "know why" in related subjects, while the apprentices' on-the-job instruction focuses on the "how to" in terms of specific job skills.

In order to maximize your effectiveness in presenting information, you must plan for each instructional session. This planning will help you to determine precisely the information that is to be presented and the instructional methods which will be used. The entire operation of preparing to present information requires that you develop and utilize several teaching skills addressed in this unit of materials. When you have completed your work in this unit you will demonstrate your abilities by being able to:

1. Outline the steps to be considered in developing a daily lesson plan for instruction;
2. Prepare a daily lesson plan for your own related subjects course.

## Why, What And When To Plan The Presentation Of Information

There are several critical tasks that you as an instructor of apprentices must perform before actually engaging in the presentation of information to one or more learners. These tasks are perfomed as the intermediate step between developing a plan for instruction (as described in Module #3) and implementing instruction. The tasks require that you determine: (1) the skills or knowledges the apprentices are to acquire as a result of the day's instructional activities, (2) the procedures which you wish to use as instructional activities, (3) the equipment and materials which will be needed to conduct the instructional activities, and (4) how you will relate the instructional content to the apprentices' on-the-job activities. This means that you must prepare for instruction in a systematic manner. The extent to which the "getting ready" phase of instruction is performed well can determine the extent to which the instruction will be received and understood by apprentices.

## How To Plan To Present Information

There is a series of steps that will help you organize and conduct your planning in an orderly fashion. These steps are described in the following discussion.

### *Step 1: Determine Appropriateness of Information*

Determine the appropriateness, the timeliness, and the extent to which new information and/or skills can be provided to the apprentices. This means that you as an instructor must (a) discuss with the apprentice(s) the characteristics of the work that they are doing on the job and (b) seek to instruct them on the technical aspects of the occupation such that they can see clearly that the material is an advantage to the knowledges and skills learned on the job. For example, if you are teaching surface measurement to apprentice carpenters, you should try to apply the instructional content to activities in which the apprentices are currently involved on their jobs. Such applications during various phases of construction might include:

> How much plywood is in the house's subflooring?
>
> How many sheets of paneling will be needed to finish the family room?
>
> How many feet of trim does the house require?

***Step 2: Determine Limits of New Information***

In preparing for a day's instructional activities, you will need to determine the amount or limits of new information that should be provided to the apprentices. The extent to which people can learn new information or acquire new skills depends upon the extent to which they (a) have been prepared to learn and (b) are guided in associating the new material with information they have previously learned. Hence, it is incumbent upon you as the apprenticeship instructor to make certain that through interaction with the apprentices you are aware of how quickly they can learn the type of information being presented. You must limit the lesson (concepts, information and skills and the time to apply them) to take this information into account. Consider both the difficulty of the materials and the time available for instruction.

***Step 3: Note Principal Points to be Taught and Supporting Illustrations/Materials***

Determine and list major teaching points that you plan to present and to stress. This is a most important aspect of instruction. The success that you later achieve in providing the instruction may very well depend upon the time and care that you put into organizing the content into small, manageable units. For each instructional unit, you should list the major or key points and illustrations of how the information or concept is applied within particular occupational areas. In planning for the lesson and getting ready for its presentation, try to be as practical as possible in selecting occupational applications which the apprentices can relate to through their on-the-job experiences. The applications should be kept current and familiar to the apprentices. If a small group of different kinds of apprentices is involved, then several examples, each of which would apply to the occupations of the several respective apprentices should be prepared. The closer you, as an instructor, are able to supply examples and illustrations of the information, skills and concepts to the actual daily working situation of the apprentice, the greater will be the likelihood that learning will occur and be retained. Remember that effective learning occurs rapidly and is retained longer when new ideas and concepts are related to those that were acquired earlier.

***Step 4: Decide on Instructional Procedures***

The information which you want your apprentices to learn can be taught in a variety of ways. Given the specific topics which you have selected for the focus of the day's activities, you should consider the alternative procedures which could be used to provide the instruction. Lecturing is but one alternative, and in many situations it is not the most efficient instructional procedure. Among the other methods of instruction to consider are:

- Instructor-supervised demonstration
- Audio and visual presentations
- Discussion groups
- Individual and group problem solving
- Individualized instruction
- Role playing

These methods are described in Skill #4 of this unit.

Keep in mind that the use of different instructional procedures will help to keep the apprentices attentive and involved. It is also likely to expand their knowledge and your knowledge of the topics addressed.

***Step 5: Seek Out and Arrange For Use of Appropriate Equipment and Instructional Materials***

In order to complete this step you must:

- decide what audio and visual materials/equipment you will need;
- locate and secure the materials/equipment for use;
- familiarize yourself with how to use the materials; and
- produce any supplementary material such as transparencies or handouts for use.

Skill #5 in this booklet of materials is addressed specifically to these concerns.

***Step 6: Consider How You Will Assess the Results of the Session***

During each class session you as a related subjects instructor will want to gauge the extent to which the apprentices are learning the material being presented. Some instructional procedures, such as group discussions and problem solving sessions, will provide you with an easy opportunity to assess the apprentices' understanding of the information. However for other activities, such as lecture presentations, you will want to seek feedback from the apprentices to determine whether they understand the concepts and information being presented. In anticipation of this, during the planning of the session you should consider how you will assess the results of the session. Therefore, your lesson plan should include some sample questions or problems which you can present to the apprentices to determine if their learning is proceeding as planned.

## Example

James Harbin is a related subjects instructor in a union sponsored apprenticeship and training program for car-

penters. In that capacity, he has the advantage of having a national curriculum prepared for his use so that he does not have to develop materials. However, he still has all the other responsibilities of any related subjects instructor, including the need to plan his instructional lesson before each related subjects session.

Over the three years that he has served as a related subjects instructor, Harbin has developed a standard procedure for planning his day-to-day instructional activities that roughly corresponds to the steps outlined in this booklet. When asked to describe his planning process on a daily basis, Harbin had this to say:

"My first activity is to decide if what is suggested in the standard curriculum is appropriate. This means that I contact the employers and speak with the apprentices to find out what they are doing or will be doing on the job this month. I then find the portions of the prescribed materials that generally correspond to the job activities. Usually this means there may be three or four groups of apprentices working on different materials at any time. I try to get as many people as possible working on the same thing.

After deciding what parts of the general curriculum content are useful to apprentices at that time, I decide how much to present each week and make a list of the major points or concepts that I expect each apprentice to learn during the class session.

Next I locate the materials I will use to teach the lesson. Since the international provides materials, I read the information, work the exercises and decide which to use. Sometimes I also draw pictures on flip-charts or make handouts to go along with the other materials. Also, I decide how to introduce the information. If I am going to talk, I outline what I am going to say; if they are going to read, I time the reading to see how long it will take and if all the words are understandable; if I need to use a projector, I get the equipment and try it out; and if it's going to be a discussion, I write out a set of questions. Usually, I write out a couple of questions anyway, just in case, to be sure I am prepared and to make them think. I ask questions to apprentices who I know are doing certain things at work to get them into the lesson."

## Additional Information

In general, it is recommended that you derive additional information about this skill by continuing your work in this booklet, by checking references listed under other skills included herein, and by reading applicable sections of Module #3. In addition, you might turn to the appropriate sections of texts such as:

D. G. Armstrong, J. J. Denton and T. V. Saunge, *Instructional Skills Handbook*. Englewood Cliffs, NJ: Educational Technology Publications, Inc., 1978

## Self-Test Exercises

*Answer the following exercises in the space provided. Check your answers with those in the Appendix of this booklet.*

1. Select an item of *technical knowledge*. Prepare to present information on the technical subject, by indicating in step-by-step format a description of the steps and the details of each step.

Technical Knowledge

_____

Step 1. _____

Step 2. _____

Step 3. _____

Step 4. _____

Step 5. _____

Step 6. _____

# 3. Skill: Introduce Lesson And Provide Clear Expectations And Directions For Apprentice Activity And Outcomes

## Introduction And Objectives

Too often in work and learning situations you may hear a supervisor, foreman or instructor say something like "If only my workers had understood what I meant. They did it incorrectly; it will have to be done again. And that lost time means money." This and other similar statements are heard over and over in the work place and the instructional setting. While some of the blame can be assigned to worker/learner lack of attention, the problem can also be a result of poor directions. There are some techniques you can use as an instructor to make the purpose, intentions and expectations of your directions absolutely clear. These procedures require using several competencies involved with giving instructions and are the contents of the remainder of this chapter of materials. When you have completed your work in this unit you will demonstrate your understanding of this skill by being able to:

1. List and explain suggested steps in presenting clear directions;
2. Suggest procedures to use in offering directions in the related subjects setting; and
3. Critique directions provided in a related subjects instructional setting.

As you work through these materials, think about your experiences in receiving and giving directions, instructions and expectations. Do you remember instances where misunderstandings arose? Would any of the suggestions found in this chapter have helped to eliminate those misunderstandings? If so, make mental notes for future reference as you read.

## What, Why And When To Use This Skill

You must give directions, provide instructions or explain expectations many times throughout an instructional or work activity. Certainly it is a necessary task at the beginning of instruction. In addition, further clarification frequently is important throughout the instructional period as progress is made and/or as new insights or difficulties are incurred. The reminder may be either to the entire group or to selected individual apprentices.

Clear expectations are important because they set the stage for learning. You must indicate exactly what will be done; by whom; in what time period; with what materials; and to what end product, outcome or result. Your directions and explanations structure the learning environment and the task; in doing so, the structure permits apprentices to create individual internal learning strategies for addressing and mastering the materials.

## How To Use The Skill

You can give directions and instructions that are virtually unmistakable if you will follow several steps as suggested in the materials that follow. Note that none of the steps is complicated or time consuming. However, studies of effective teachers have indicated that each of the steps is important.

### *Step 1: Decide Exactly What You Want Apprentices To Do*

Surprisingly, instructors often make assignments or give directions to learners without a clear, exact idea in the instructor's own mind about what he or she wants the learner to do. Instead, the task is clarified over subsequent class meetings or as the first several completed products or assignments are turned in. Subsequent clarification always means that some apprentices have wasted valuable time and energy and must restructure their activities. To avoid this situation, it is recommended that you as an instructor make sure you know exactly what you want the apprentices to do. If necessary, read all assignments before making them; prepare model answers/outputs for work examples, assignments and tests; and perform or thoroughly review all tasks before requiring apprentices to undertake them. In this manner, you will be able to assign tasks with confidence that they are exactly the tasks you want to use to convey and reinforce information.

***Step 2: Wait Until Everyone Is Listening Before Giving Directions***

It is advisable to demand the attention of all apprentices in your charge before giving directions or instructions. Apprentices must come to realize that related subjects instruction is an important and necessary extension of their work and deserves equal attention. If one or more of the apprentices appear not to be listening, get their attention by either waiting silently until they observe the silence or by asking for their attention by name.

***Step 3: Speak Clearly, Loudly And In Appropriate Language***

Speak clearly and loudly enough for everyone to hear you. Establish eye contact with your audience, and turn your head so that you face each apprentice at some point during your presentation. Remember that most of the apprentices will have worked a full day (as you did) before you see them; they may be a bit tired, and, depending on their job and physical characteristics and background, will listen and hear with varying degrees of accuracy. Perhaps most important, be sure that you use language that is appropriate to the audience. Use language familiar to the apprentices, and explain or define any new or unusual terms. Use relatively short and direct sentences. Stress the actions in which the apprentices will engage. Express complete thoughts in as few words as possible and give an example or illustration. If the directions or instructions are especially long or complicated, break them into manageable parts or units that serve as discrete sets of directions.

***Step 4: Explain Object of Lesson***

Using the performance objectives you will have created before instruction began, explain the object of the lesson. Be certain to indicate exactly what product or level of outcome is expected and considered as acceptable evidence that the task has been completed. Also mention how the task, activity or lesson is related to the overall set of skills and knowledge that must be mastered by the apprentice in the trade or craft. It also is appropriate to indicate the time limitations or requirements as well as material and equipment needs that will be necessary to complete the task or lesson. Emphasize those portions of the lesson that have long-term effects for the journeyman.

***Step 5: Make Certain That Apprentices Understand Directions and Instructions***

After completing the set of directions or instructions, you should check for the level of understanding among the apprentices in your charge. Two techniques are especially useful in this regard: paraphrasing and inviting questions. In using paraphrasing you ask selected apprentices to explain the directions or instructions that you have delivered to them in their own words. They should be able to list each important point although not necessarily exactly in your words. Occasionally you also might have them write out the instructions in their own words and check a couple of the written statements.

In inviting questions you should establish as a regular occurrence the practice of asking questions before work is begun. The questions and answers should be focused on clarification of the task. Do not tolerate stalling or diversionary tactics. Answer the questions quickly and precisely and get on with the tasks under consideration. If you wish, you can use the questions and answers as a way to cue learners, as a time to provide examples/illustrations, or as a time to increase learner motivation.

***Step 6: Provide a Written Copy of Difficult Directions***

In order to clarify complicated or difficult directions, you should consider listing the directions or instructions as a schedule. The schedule can be handed out or posted in a permanent or designated spot so that the apprentices can refer to it as needed. This is especially useful if your related subjects apprentices comprise several groups of trainees, either by year or trade, and therefore are performing different activities. By creating a list, you can order in chronological fashion the tasks of the apprentices. More importantly, you can break down the instructions into small, manageable units. In this way you decrease both the level of difficulty of the task and the problem of keeping up with a large set of difficult directions.

## Example

Joseph Scentilla, a related subjects instructor in a graphic arts apprenticeship and training program, had taught related subjects for two years. From time to time he noticed that some apprentice printers, particularly first year trainees, had difficulty with the directions that Scentilla gave for certain segments of instruction. He always had attributed the difficulty to the apprentices not paying attention. However, as he reviewed his Plans For Instruction from the past two years he noticed that even the first year apprentices that he had considered to be especially capable and attentive had had some difficulty with particular segments of instructions. At first Scentilla decided to change the instructional materials. However, another tradesman in the print shop where Scentilla worked, upon hearing about Joseph's comments during lunch, indicated that he too had had difficulty with some of the same materials during his own appren-

## Figure 2. Directions for Scentilla's Class

Week of February 1-7

| Topics | Instructions | Expected Time Use |
|---|---|---|
| #1 Positioning of press guage pins and quads | a) Read text #1, pages 80–93<br>b) Use learning station #3, (model of guages for printing press) | 7:00 - 8:00 |
| | | 8:00 - 8:15 Break |
| #2 Maintenance of machine composition letterpress | a) Read text #2, pages 110–125<br>b) Watch demonstration<br>c) Complete handout on procedures | 8:15 - 9:30 |

ticeship. The friend went on to say that he eventually had decided that his difficulties had arisen because he simply had not understood what was expected of him or how to perform the tasks. This comment caused Scentilla to try an experiment. He decided to keep the instructional materials and learning activities as they had been while changing the directions and instructions. Specifically, he decided to combine oral and written directions. After typing and reproducing copies of step-by-step directions for the entire unit of materials, he posted a copy of the directions for all apprentices to see, along with an expected time schedule and an example of the required output of the learning activities. Next Scentilla discussed the directions with the first year apprentices, answering questions and making certain that each trainee knew exactly what was expected and why the activity was being included in the course of study. A segment of the directions written up by Scentilla is depicted in Figure 2. Note that Scentilla included instructions, major topics, and expected time frames for activities.

## Self-Test Exercises

*Answer the following questions in the space provided or on separate work paper. Compare your answers with those in the Appendix of this booklet.*

1. Assume that you must explain to a group of related subjects instructors the process of providing clear directions for apprentice activities. List the points you would make and indicate briefly why each point is important.

2. Read each of the following situations and suggest potential remedies for any problems that you note.

   a. Directions/instructions for each evening's related subjects activity were written out and posted on the back of the door to the instructional area. Each apprentice was to read the directions upon entering the lab and then begin the evening's work. Still, the instructor found himself answering many individual questions about the directions throughout the instructional period.

   b. The related subjects instructor always began each session with roll call and presentation of directions for the evening's activities. He read the directions once and only once two minutes after class began. Too often he found apprentices had not understood or taken in the entire set of directions.

3. Select some units of materials in your related subjects instructional responsibilities and create a set of directions and instructions to provide for apprentices. Check your directions against the requirements listed in the Appendix of this booklet.

# 4. Skill: Vary Methods For Presenting Information

## Introduction And Objectives

There are a variety of ways through which you can present information that will yield the desired level of apprentice learning. The particular presentation method you select and use will be determined by the type of information to be presented and the learning styles of the apprentices in your charge. Remember that regardless of the methods you select, you must set the stage for instruction by organizing the learning activity; by indicating precisely what is expected of the learners during and after completion of the learning exercise; and by explaining the meaningfulness of the related subjects contents in terms of on the job needs.

In order for you to perform the skill of varying presentation methods and techniques you must develop and use the several skills and knowledges discussed in this unit of materials. More specifically, when you have completed your work in this section of materials, you should be able to:

1. Identify, describe and distinguish among several methods for presenting information in related subjects settings;
2. Critique situations in which various information presentation techniques are used in related subjects instruction; and
3. Determine the techniques or methods that you will use in your instruction.

As you read the materials, consider the methods you have used and those you have seen used in related subjects instruction. What other techniques might be available in order to increase the variety of methods and the interest of apprentices?

## Why And When To Use The Skill

Instructors need to vary their strategies for presenting information in order to stimulate learning by matching content with method, by matching learner characteristic with method and by matching teacher and learner need for variety with method. Too often instructors will find one method with which they feel comfortable and use only that method. The result is that, after a while, both the instructor and the learner become less attentive to the information in that learning situation, and learning rapidly declines. This is particularly critical for related subjects instruction because you have such a relatively short time period for instruction compared to other learning settings. By varying the methods of presentation and by attending to the several other steps outlined in this unit, you will be able to maintain interest and learning efficiency. Remember, varying the method of presentation is something that you must consider before, during and after each lesson you present in related subjects instruction.

## How To Use The Skill

There are several steps involved with the skill of varying the mode of information presentation as outlined in this section. The steps are: (1) present information; (2) compare, abstract and apply information; and (3) summarize information for later use as well as provide follow-up activities as needed. Each step will be discussed in order. Note that the actual process of varying the method of presentation is contained within Step #1; five different methods or procedures are outlined for your consideration.

### *Step 1: Present Information*

During the actual presentation of information, you will find that the efforts you expended in planning for the presentation will pay off. Keep in mind that you must:

a. emphasize the major points of the lesson;
b. set realistic limits on the amount of new information to be undertaken at any one time;
c. convey accurate, complete expectations to learners concerning activities and outcomes; and
d. present examples that illustrate and apply the points to be made.

Pay particular attention to breaking up the material into concepts and skills of suitable complexity that they can be mastered in the allowed time. You will find that experience is the most useful factor in making the decision about how much new knowledge can be learned by apprentices in a given time period. If you are uncertain about how much to include, remember it is better to include too little and be

certain of mastery than to include too much and overwhelm the learner. Discussion and demonstration of information does take time. In addition, if you plan two weeks in advance as suggested, you will have additional materials ready if needed.

As you introduce material try to present information that is associated or connected directly to concepts and skills already held/ learned by apprentices. This process is called "establishing an apperceptive base"; it means that the skills and knowledges already held by apprentices provide them with a springboard to move into new skills and information in the related subject field. If the new skills and knowledges to be presented are of sufficient quantity and directly related to the apperceptive base, then the likelihood of learning is going to be high. It is in your interest as well as that of the apprentices that the known skills and knowledges held by the apprentices be the base upon which the new skills and new knowledges are developed so that they can be mastered in the allowed time.

Your behavior as an instructor also is important to the success of the lesson, regardless of the method of information presentation that you use. Instructor effectiveness too often is judged by mannerisms—and particularly the use of one's voice—in the instructional setting. Remember that your voice should be modulated carefully so that you present an expression of personal enthusiasm and conviction throughout the lesson. Speak loudly and clearly and do not hesitate to repeat or emphasize something. Pace your delivery rate to the understanding level of the learners and ask frequent clarifying questions to determine if the information being presented is being absorbed. If needed, repeat and/or explain in a different fashion the material under consideration.

The actual method or procedure for presenting information that you choose should be based on the type of material under consideration, the characteristics of the learners, your own preferences, and the time and place of instruction. The choice is entirely up to you; you should expect to use several techniques during a ten-hour segment of related subjects instructional time. Five different modes of presentation are offered for your consideration in conjunction with this skill. Audio-visual procedures are presented in Chapter 5 in this booklet.

*Demonstration*

This procedure is a process where one person (you as instructor or an apprentice) does something in the presence of others in order to illustrate a point or show everyone how to perform an activity. The method is especially useful because learners can see what happens; it holds learners' attention; it depicts performance standards and procedures; it reduces the potential time for later trial-and-error learning; and it illustrates abstract points. While the technique is time consuming to plan and use and can imply simplification of the information under consideration, it can provide a form for immediate application and discussion of information under consideration/in use by apprentices. It not only can stimulate interest in the topic, but as other learners try their turns at demonstration, it can provide for a real sense of accomplishment. The rules for using demonstrations are simple yet critical. They are:

1. Take the plan and rehearse the demonstration in advance and in its entirety in order to make sure that it works and that you have all necessary materials.
2. Set the stage for the demonstration by introducing key concepts and explaining desired learner outcomes.
3. Make certain that all learners can see and hear the activity.
4. Ask questions, provide feedback and register important points throughout the demonstration.
5. Recap the major steps and points at the end in way of summary. Also consider repeating parts of the process showing correct and incorrect ways to do things.
6. If possible, have several learners replicate the activity.

*Discussion*

This procedure is a process whereby a group of people under the direction of a moderator (you, as instructor, usually) share information about a topic or concern. At varying times it can be a debate, a question session or a forum. Its advantages include that it actively involves the learners in processing and considering the information and increases motivation; it provides a controlled setting for giving and taking instructions; it requires one to consider examples and applications of the information being discussed; and it offers an opportunity to develop questioning and responding skills. The technique has several disadvantages that you must overcome. The disadvantages are the amount of time it takes to present information; the occasional lags in conversation; the possibility that some learners will not participate in the discussion and may not learn from the process; and the situation that some learners will not have the prerequisite knowledge to participate. The rules for holding a discussion type of learning activity are as follows:

1. You as the instructor must be thoroughly familiar with the content under consideration . . . and prepared to answer all kinds of questions.
2. You must be willing to have the instructional period take the extra time that is required to present and work through the information.

3. Present the question and topics under consideration in a clear, concise manner. Define terms, establish the relevance of the topic to current job activities and provide examples whenever possible. Use learner on-the-job language whenever possible.
4. Moderate the discussion by calling on speakers, clarifying concepts, answering questions, making summaries and conclusions and insuring that the discussion stays on the intended course. Encourage learner participation, but discourage dominance by any single individual or group.
5. Summarize the main points and conclusions when the discussion is over. If possible plan follow-up activities.

*Individualized Instruction*

This procedure is a process whereby you, as the instructor, plan and execute plans for lessons on a one-to-one basis with apprentices, based upon personal needs and capabilities of each apprentice as revealed through assessment. The individual learning activity may involve group study, independent study, projects and a variety of other teaching strategies. Individualized instructional procedures require great skills on the part of the apprenticeship instructor, because it means you may be faced with meeting the needs of ten or more apprentices, each on a different level of understanding or in a different level of their apprentice training program. A lesson must be prepared for each of the apprentices. This is time consuming, but motivating to each of the apprentices, since each will be involved in instruction that has meaning and possibilities for him/her within the range of his or her understandings. Individualized instruction has a very evident advantage in that it allows each apprentice so instructed to move ahead at his/her own rate of understanding and pace, and to master as much information and skills as each is capable of mastering. Other advantages include the fact that learners must assume more responsibility for their own learning, learners can see their own progress more easily and retention of material is improved. The major disadvantages for this form of instruction include the time it requires of you as the instructor to prepare, evaluate and record individual progress and the fact that some of the instructional materials that you need may not be available. Rules and directions for using individualized instruction have been discussed in Module #7 of this instructor training series. Stated briefly, they include:

1. Determine the strengths and limitations of each learner and prepare instructional goals and objectives that bridge the gap between overall instructional goals and individuals abilities.
2. Collect and organize materials necessary for providing instruction to each learner. Prepare a set of instructional directions, together with objectives and materials for each apprentice.
3. Keep careful records of individual achievements, progress and needs.
4. Monitor activity, offer assistance if needed and provide for additional and supplemental activities as needed.
5. Adjust factors such as time and level of difficulty to make learning efficient for each apprentice.

*Lecture*

This procedure is the traditional teaching process whereby you as an instructor present the concept of information by direct verbal communication. When used to its best advantage, you also will use aids such as the chalkboard, models or overhead projection to add to the information being presented. Further, you provide an opportunity for questions and comments. Advantages of the technique include the opportunity it offers to control the presentation of information and to emphasize certain points; it can introduce information that is not available in written materials; and it is a comfortable way for most instructors to present information. The disadvantages of the technique include the fact that during a lecture the learner is passively rather than actively involved; too frequently learner attention is distracted or can be beset by boredom; and it is sometimes difficult to associate hearing about skills and knowledge and actually performing the skills. The rules for using lectures to present information are:

1. Carefully organize what you will say, beginning with goals and objectives, noting main points and examples, and concluding with a summary statement. Be certain to make the logic of your argument/information explicit.
2. Deliver the information in a carefully modulated, clear voice using the language of the learner. Avoid monotonous and boring styles of speaking by changing intensity; being enthusiastic and including frequent examples; and using models and audiovisual materials when possible.
3. Avoid simply presenting information. Ask questions, encourage discussion and seek feedback. Always allow and encourage questions from learners.
4. Watch the audience for signs of effectiveness and adjust information and style as needed.
5. At conclusion, recap major points for emphasis and provide follow-on activities.

*Role-Playing*

This procedure is a process where you as the instructor describe a hypothetical situation and the learners assume

specified character roles to act out in that situation. Typically, role playing is performed within a group setting where some of the learners act out the roles which others observe; a group discussion usually follows the role playing episode. Role playing is particularly well suited for increasing the learners' interpersonal skills and their understanding of social behaviors. It allows the participants to do or say things the character might say in the situation but which the person would be reluctant to say or do. It also allow participants to view a problem situation from another person's perspective. Examples of two-person role playing situations are as follows:

- A dissatisfied customer who doesn't want to pay the tradesperson who performed the job
- A supervisor confronting a worker who is habitually late arriving for work
- Two journeymen disagreeing about ownership of a hand tool, but neither is absolutely sure the tool belongs to them
- A supervisor telling a craftworker he or she must change his vacation schedule

Potential disadvantages of role playing are that it relies heavily on the willingness and ability of the participants to perform their roles realistically and sometimes learners may focus the attention on the "acting" rather than the critical points of the situation. The rules for using the method are:

1. Design the situation and the roles in detail. Work through a variety of possible outcomes and actions (and your remedial strategies) before using role play in an instructional setting.
2. When introducing the role play, give specifics on the situation and permit learners to organize their thoughts about their roles before beginning the action.
3. Take notes on important activity (and/or have apprentices not involved as actors in the situation do so) and discuss these with the group at the conclusion of the role play. Actively encourage questions and reemphasize major points at that time. If necessary re-enact portions of the activity with the same actors or with other apprentices.
4. If emotions get out of hand, reverse roles of participants.
5. Always discuss resolutions of problems and how specific knowledge and skills were used in the resolution.

***Step 2: Compare, Abstract and Apply Information***

The second step in the presentation process is to compare, abstract and apply the information. The use of illustrative examples is the suggested method for completing this step. Applications and examples help to set firmly in the apprentice's mind the uses of the concept, general information or skill in the occupation of employment. In addition to serving the purpose indicated here, the applications and illustrations serve an important role in assuring the apprentice of the validity of the instruction in terms of the manipulative skills he/she may be acquiring on the job. You will find that using frequent examples and illustrations will reinforce the concept learned and stimulate the apprentice to note the wide number of opportunities for the concept to be applied in his/her skilled occupation. Some difficulty in constructing appropriate examples may be predictably encountered by any instructor who has apprentices from many trades in a single related subjects class. In such situations, you should seek out the advice of individuals employed in each of the subject trades/crafts for ideas and suggestions. Many skilled craftworkers are delighted to provide examples of applications of exquisite skills and knowledges for their own trades/crafts as well as suggesting ways to discuss and present the information to apprentices. Remember that skilled craftworkers also have a stake in preparing highly skilled apprentices.

***Step 3: Make A Summary Statement and Provide Follow-On Activities as Needed***

The final step that you must take in presenting information is summarizing all the key points that were made as well as providing follow-on activities as needed. A summary should contain each of the several segments of the presentation that were stressed; the illustrations and applications that were presented; and particularly the extent to which the disclosure of the skills, concepts, and information was relevant to the apprentices' occupations. One effective way to do this is to engage the apprentices in small group discussion and to raise questions about those items that were discussed first, second, third and so on. At the same time, using a chalkboard as a visual, begin the preparation of the summary. After the chalkboard material is in place, you should seek to summarize in your own words what has transpired in the lesson and to stress the importance and significance of the concepts, skills and information.

Your presentation is not completed with the summary statement. It is your responsibility to build the bridge between the lesson just being completed and the next to be undertaken as well as to continue to reinforce the major points in the lesson just completed. Consider assignments that provide continued use of the information in settings such as on-the-job and in the library if additional reading would be helpful. Then indicate where and when the learners must carry out the further assignment. Where possible, make an on-the-job assignment that demonstrates

both the major points from the lesson being completed *and* their relationship to the next lesson to be undertaken.

## Example

Ann Seppa taught related subjects instruction in lathing for an apprenticeship program sponsored by a metropolitan area builders association. Each of the apprentices in her charge was a final year apprentice who worked on a different jobsite; however all were engaged in home construction. The related subjects instruction class was held on Thursday nights from 6:30 p.m. to 9:30 p.m., after full work days. Seppa recognized that her major concerns were the need to stimulate learner interest/attention and the need to adjust content to the different work circumstances of the apprentices in her charge. In her third year of teaching related subjects, Seppa decided to address these issues by varying the information presentation modes for the subject she would teach. Her solution was to begin a program of using lecture, individualized instruction, demonstration and discussion in almost every meeting. She organized the content into three learning centers—one for rock lath bases, one for plaster bases and one for metal bases. At the beginning of each month, each apprentice brought Seppa a card from his/her foreman on which was checked the things that the individual apprentice would most likely be doing on the job that month. A portion of the card is illustrated in Figure 3. Based on those data, the apprentice was assigned to one of the three learning groups. Within each learning group, Seppa prepared similar lessons. For example, she would prepare a lesson on application or on fasteners for each of the types of lathing for use on the same evening. The learners in each group used the materials prepared for them each evening. Seppa organized each learning group session in a way that permitted her to spend one of the three hours of each related subjects sitting with each group. During that hour, she tried to present a brief lecture, conduct a brief demonstration and hold a group discussion about application of information to the work situation. The demonstrations always came on the half hour and were observed by all learners. During the two hours when Seppa was working with one of the other groups, the apprentices with whom she was not working would read their text and instructional materials, do their worksheets, and usually attempt to replicate the demonstration performed by Seppa. This process of presenting information did increase Seppa's preparation time from 1 to 4 hours of time per week.

### Figure 3. On-The-Job Assignments

Apprentice Name: _____ Month: _____

Please check each lathing activity in which the above named apprentice is likely to engage this month:

1. ___Rock lath work
2. ___Plaster lath work
3. ___Metal lath work
4. ___Screws
5. ___Adhesives
6. ___Nails
25. ___Staples
26. ___Ceiling/floor runners
27. ___Trusted studs
28. ___Runner tracks
29. ___Metal studs

## Additional Information

A number of good general texts are available that deal with the presentation of information: Among the better ones to which you might turn is:

R. T. Hyman. *Ways of Teaching.* Philadelphia: Lippencott, 1974.

## Self-Test Exercises

*Answer the following questions in the space provided or on a separate work paper. Compare your answers with those in the Appendix of this booklet.*

1. Each of the five suggested methods of presenting information have certain advantages and thus help to determine when you might use them. Suggest the advantages you note for each method in the space provided.

   a. demonstration-

   b. dicussion-

   c. role play-

   d. lecture-

   e. individualized instruction-

2. Given what you know about methods of presentation, what technique would you prefer to use in each of the following situations?

   a. A presentation of an intricate skill in the field of sheet metal mechanics training?

   _____

   b. A presentation of a very general nature, concerned with shop safety?

   _____

   c. A presentation of technical information to a number of 3rd year carpentry apprentices?

   _____

   d. A presentation in the area of Blueprint reading for the machine trades, where among the apprentices present only one was a machine shop apprentice.

   _____

# 5. Skill: Use Instructional Aids in Presenting Information

## Introduction And Objectives

Any time that you present information you should consider using, in addition to verbal information, other ways of attracting learners' attention to principal points of concern. These other methods of highlighting and presenting/supplementing information are called instructional aids.

The purpose of this chapter of materials is to provide you with information and sharpen your skills in using instructional aids such as the chalkboard, overhead projector, handouts and audiovisual materials. At the conclusion of your work in this unit you should be able to:

1. Describe the process and advantages of adopting and using various instructional aids;
2. Suggest specific instructional aids for certain instruction situations and indicate why the materials would be appropriate and;
3. Indicate why and how instructional aids are valuable as a related subjects instructional tool.

Do you routinely use instructional aids in your related subjects instructional setting and/or were they used in the training program in which you were an apprentice? If so, recall how. If not, consider as you read the ways you might use such materials in your instructional effort.

## What, When And Why Use The Skill

Almost any time during the presentation of information that you wish to call attention to, it is appropriate to use an instructional aid. The only criteria for determining whether or not to use one are the cost and the degree to which the aid reinforces and supplements information under consideration rather than disrupting the flow of the lesson.

There are three major reasons for using such materials, two of which are associated with motivating learners. First, use of instructional materials attracts the attention of the learner because such materials offer a change of pace and frequently use other learner senses such as seeing, smelling, feeling or doing in addition to simply listening. Second, use of instructive materials highlights important or critical elements of the information being presented; in calling attention to those parts of the information they are more likely to be remembered by the learner. Third, often instructional aids offer a second way of processing the information under consideration and thereby aids offer the learner another opportunity to grasp information which they might have missed the first time through the material. In this regard instructional aids frequently present examples, illustrations or applications of the major concepts under consideration. In each instance, the aid is a valuable, almost indispensible instructional tool.

## How To Use The Skill

In using instructional aids in the related subjects teaching setting you should follow a three-step procedure. The steps to follow are: (1) preparing to use the materials; (2) using the aid; and (3) noting/discussing the key points. Each is discussed in turn in the following section.

### *Step 1: Preparing to Use the Materials/Aids*

In using any instructional aid, you must always prepare and practice with the aid in advance of its use in the instructional setting. Such preparation is important in order to insure that the aid will work as you desire and in order to insure a smooth transition to and from use of the aid. For example, in order to make effective use of projected visuals, you must preview them. The previewing of materials will provide you with knowledge about content, the level of understanding/knowledge required to process the information in the visual, the breadth and depth of coverage with regard to information and occupations, and the usefulness to apprentices. The previewing process will enable you to integrate the materials effectively in the overall lesson presentation.

In previewing materials, you should make notes concerning the major points or key points contained in the materials. You also should seek to determine controversial points, or additional key points that might require emphasis and further discussion in the group, or with the individual apprentice viewer. Never lose sight of the fact that audiovisual materials provide important illustrations and applica-

tions of a concept or skill. At no time is the audiovisual material the entire lesson. Rather, audiovisual materials constitute additions or augmentations to a lesson, and as such must be integrated in the overall lesson planning procedure regarding the presentation of information.

***Step 2: Using the Aid***

Several kinds of aids are suggested for your consideration. Each is discussed in terms of what the aid permits you to do, its advantages and disadvantages, and points to bear in mind in using the aid. The aids discussed are the chalkboard, bulletin board and displays, flip chart, handouts, audio tapes, overhead projectors, models/mock-ups and cutaways, and motion picture and slide presentations. Note that the presentation included in this unit of materials has been kept brief and highlights only the most critical information. However, if you combine this information with that included on the actual equipment you should be able to use the aid in any instructional setting.

*The Chalkboard*

Regardless of the method of information presentation you choose, the chalkboard or blackboard is a useful piece of visual equipment to help focus apprentice attention on the key information points. The uses of the chalkboard include (a) display of information on the chalkboard prior to the beginning of a presentation, or (b) subsequent item-by-item development on the chalkboard during a presentation. The advantages of the aid include its relative availability and ease of use; its flexibility and lack of expense; and the opportunity either to prepare it before the lesson and/or to use it as the lesson progresses. For example, applications such as sketches that show extensive development of construction lines and dimension lines often can be prepared in advance of some kinds of lesson presentations in order to conserve time. In other situations, when the development of a sketch on the blackboard is in fact the lesson underway, there is no need for prior preparation, but instead, continue use in the instructional setting. Some rules for using the blackboard or chalkboard are:

1. Plan your use of the medium by deciding what you will write or draw, in what area, and in conjunction with what instructional activity. Be sure that you have chalk and eraser before beginning lesson.
2. Write/draw legibly and large enough to be seen by students in the back of the room. Practice writing in straight lines and work from left to right on the board.
3. Try to be brief in your work at the board; carefully interspace its use with other information presentation to reduce distraction. Be sure to continue adding verbal emphasis.
4. Try not to block the learners' view of the information on the chalkboard.

*Bulletin Board and Displays*

These aids are portable or stationary aids upon which you can attach displays, notices and illustrations. They can be used to stimulate interest and dress up otherwise austere settings. You also can refer to items on the board during the presentation of information. The rules for using a bulletin board are:

1. Plan before creating the display so the material you present clearly displays an obvious theme.
2. Remove old materials from the display on a regular basis.
3. Be sure to refer to the product during the lesson.

Handbooks, trade journals, news magazines and other sources of good and relevant materials will provide the innovative instructor with valuable resource materials for bulletin board display. These materials, in addition to being an integral part of the lesson, also convey to the apprentice learners the extent to which the concept, the information or the skill under discussion or demonstration is an accepted (or at least "reported") practice in the world of industry and business. Thus, bulletin board materials may function as part of the presentation of new concepts and skills, and also as evidence of their application.

*Flip Chart*

This aid is a large paper tablet positioned on an easel or on the wall. You use it in much the same manner as the chalkboard, displaying information on the flip chart using felt-tipped markers. The advantages of flip charts over chalkboards include: (1) the opportunity to prepare the material beforehand outside of the instructional setting and (2) the opportunity to save this information for later reference and use. The chart is easily movable and can be expanded by tearing off and taping up multiple sheets of the paper. Some rules for using the aid are:

1. Due to space restraints, plan in advance what you will display. Use only key words and drawings and be certain to write in large letters.
2. Do not block the view of the audience.
3. When you complete a page, tear it out and post it so as to cut down on future distraction.

*Handouts*

Handouts are aids usually on sheets of paper that are provided to learners. They frequently are outlines, drawings, summaries or listings of key points which call the attention

of the learners to a restricted amount of information. Handouts can be used to organize information and to stimulate additional thought. They are easy to see, can be used with any group, and provide a lasting cue to the learner for remembering the presented materials. Since they can be distracting and do break up the continuity of a presentation, you must plan carefully where and how to introduce them. Some rules for using a handout are:

1. Use them only at appropriate times when they supplement or reinforce information rather than distract from the presentation. Pass them out only when ready for their use.
2. Explain the purpose of the handout and refer to it immediately after you have handed it out.
3. Always have extra copies to replace those that will be lost.

*Audio Tapes*

This aid is a cassette tape or reel-to-reel tape that can be played to convey information, set up a situation, or demonstrate an example of the application of the information being covered in the lesson. Audio tapes have the advantage of being easy to make, use and store. They can be used in most settings and are inexpensive. However, use of audio tapes does require the learner to have, develop and use listening skills. Further, the type of materials that can be conveyed is limited. Rules for using audio tapes and recordings are:

1. Use them only if they supplement other presentations and aid in meeting performance objectives.
2. Remember to preview the materials and plan exactly when and how to introduce them into the lesson.
3. Follow up their use by discussing the information on the tape and emphasizing the key points that were made.

*Overhead Projectors*

This aid uses a transparency to project lists and drawings to a scale big enough for groups to see. It is much like a flip chart or chalkboard except that you write with a grease-pencil or felt tip pen and do not have to turn away from the learners to write. These projectors also enable you to use overlays of information or additional parts as the lesson progresses. Transparencies are easy to make and store, can be reused and can be prepared either in advance or during the lesson. The projector also is easy to use. Rules for using overhead projectors are:

1. Prepare transparencies before presentation when possible and plan their introduction to reduce disruption.
2. If you intend to use the transparency again in the future, prepare it using a permanent ink felt tip pen.
3. As you discuss the transparencies, point to the parts of it you are using at any one time.

*Models/Mock-ups/Cutaways*

Models, mock-ups and cutaways are examples of real objects that often are reduced or increased in size when compared to the real object and that can be brought into the instructional setting. Cutaways provide a view of internal construction not visible from outside. In some instances, parts can be removed and manipulated. The idea is to show the parts of the real object as well as the relationship of the parts to each other. Frequently they permit you as an instructor to show how something works or is operated and provide a simulated experience to the learner. The rules for using these aids are:

1. Make sure the object illustrates the points you want to make.
2. Integrate it into the overall presentation to reinforce information.
3. Try to provide learners an opportunity to use the materials or study them in more detail on an individual basis.

*Motion Pictures and Slides*

Motion pictures and slide presentations enable you as the instructor to provide learners with an opportunity to examine processes, activities and products that cannot otherwise be brought to the instructional setting. These aids add realism to the instructional setting, draw attention to important points, and can portray in a matter of minutes a sequence of activities that in actual practice takes hours, days or even months to accomplish. You will probably need to rely on commercially produced motion pictures; however, good slide presentations can be produced by instructors who are amateur photographers. Commercially produced slide-tape presentations are also widely available. Before using any motion picture or slide presentation you will need to preview it. Other rules for using these aids are:

1. Based on your preview of the material, prepare a listing of questions or points that you want to raise before, during or after showing the film or slide presentation.
2. Familiarize yourself with the operation of the projector; pay particular attention to how motion picture projectors are threaded and how to rewind the film.
3. Try to have an extra projector lamp bulb available at the time of the viewing; test the projector before the instructional session begins.
4. If you are preparing your own slide presentation, pay

as much attention to developing your narration as you do to the taking and selection of slides.

5. For commercially produced slide-tape presentations, feel free to stop the presentation and provide your own elaboration at any point.

***Step 3: Noting/Discussing Key Points***

After using instructional aids in a presentation, you should plan to raise pertinent questions and discuss with apprentices some of the points that were observed earlier in previewing the materials. Many of these questions or the subsequent discussions should be planned for as part of the regular presentation. Make certain that the impression upon the apprentices is not that the aid provides all they need to know. Instructional aid materials integrated in a full lesson plan will help you to choose the questions to raise and the discussions for which you must plan. The aid is only that, a supplemental aid.

## Example

John Laurence was a carpenter who had been a related subjects instructor for two years. During those two years he felt that there were many occasions where his presentation of information to apprentices could be enhanced by pictures showing the application of the principles and points he was addressing. He prepared some flip chart diagrams for use in this regard, but didn't feel the apprentices viewed them as real examples. Laurence tried to locate some audiovisual presentations which would show the points he wanted to emphasize, but upon previewing a number of these he did not believe they were suitable for his needs. As an amateur photographer, Laurence decided he would try to develop his own slide presentations for use in his classes. He asked his foreman if it would be all right if he took some pictures on various job sites, and explained to him the use he intended to make of the slides. Once permission was granted, he made it a point to keep a camera in his car whenever he went to a job site, and to take some pictures on a regular basis during lunch breaks and after work. Over the next several months he was able to take pictures of two houses under construction from the start of framing until they were completely finished. The pictures he took were primarily related to job safety and applied mathematics, two of the related subjects which he taught. He reviewed his slides in relation to the content matter outlined in his plan for instruction, and categorized the slides by content applications. He then developed a series of short slide presentations to use at different times during the year. Laurence found that his slide presentations enabled him to give real visual examples of the points he was trying to make in class. He immediately noticed that the apprentices in his classes seemed more interested in the subject matter when slides were used to provide examples. In a short time, he concluded that the use of his own slides was an excellent aid in his related subjects instruction, and he continued to take pictures to add to his collection.

## Additional Information

Most aids include direction for use. Discussion of advantages, disadvantages, and applications are available in texts such as:

A. S. Jones, L. L. Bragford, and E. A. Waller. *Strategies For Teaching.* Metuchen, NJ: Scarecrow Press, Inc., 1979.

## Self-Test Exercises

*Answer the following questions in the space provided or on a separate work paper. Compare your answers with those in the Appendix of this booklet.*

1. What characteristic is shared by all instructional aids?

2. For what specific purposes should an instructor preview a motion picture or a film strip before projecting either for apprentices?

3. What is an overhead projector, and for what purposes may it be used in presenting information or skills?

4. Select a lesson to be taught, using an instructional method that appears appropriate. Now, describe in detail the steps you would take to utilize a sound-slide film in the presentation of the technical information planned for in the lesson.

Step 1.

Step 2.

Step 3.

# 6. Skill: Modify Instruction Based On Learner Feedback

## Introduction And Objectives

A skilled craft is ever in the process of change. New products, new processes and new ideas are influential in causing the skills and knowledges needed by a skilled craftsworker to be updated into the sphere of modern aspects of the occupation. This makes it critical for you as an apprenticeship instructor to discuss with each apprentice the characteristics of the actual on-the-job skills in which the apprentice is engaged. Regular conference discussions, counseling sessions and information exchange sessions provide an instructor of apprentices with current, useful information. Through such devices and others such as the use of tests, short quizzes, and visits to job sites, you may gather sufficient information to regularly modify and update the instructional materials used in apprenticeship training.

The objectives of this section of Module #5 are to provide you, the apprenticeship instructor, with useful suggestions concerning how to obtain information from apprentice-learners and other sources that may be helpful in maintaining the instructional materials at a high level of currency. At the conclusion of your work in this unit of material you should be able to:

1. Move with confidence into discussions with the apprentices to obtain from them information useful in the process of modifying instruction material.
2. Suggest procedures that may be useful to obtain current information with regard to manufacturing processes, new materials and products, from which subsequent modifications of the instructional materials may be made.

## When And Why To Use The Skill

You must attend to the updating of instructional information, materials and examples throughout the related subjects process, particularly in trades in which rapid advances in technology are taking place. It is appropriate to schedule discussions with on-the-job supervisors, employers, sponsors and apprentices at regular intervals throughout the instructional period to collect information. Further, it always is a good idea to review thoroughly all instructional activities and materials before their use to insure that they are current and appropriate to the task. Remember that an apprentices' commitment to related subjects instruction lies in their perception of the relevance and usefulness of the information to their chosen craft or trade.

## How To Use The Skill

There are several procedures or techniques that you should find useful in gathering information to modify instruction. These are noted in the following discussions as a series of steps. However, any one procedure can be, and often is, used independent of the other techniques.

### *Step 1: Review Learner Responses to Applications and Examples*

Some of the best clues that an instructor may have to the usability and practicality of the skills, information and concepts presented in the lessons often come from the apprentices. Their responses to the example applications provided by the instructor can indicate whether they feel the examples currently apply to their trade. Furthermore, when you ask your apprentices to indicate how they would apply a concept or information on their jobs, the applications which they describe can give you new ideas about the appropriateness of your examples.

With the modification of the instructional program in mind, you as the apprenticeship instructor should have each apprentice search through the many operations and/or practices of their skilled trade or craft and supply to you a detailed description of how the concept, skill or information is in fact being used on the job. The type of work being done by individual apprentices probably will provide each of them with applications different from those submitted by other apprentices. By having each apprentice suggest illustrative applications of the skills and knowledges under discussion, you will collect valuable information about how to modify instruction. Further, if you will record or note the information, illustrations and examples suggested by

apprentices, in subsequent presentations you will have additional examples of illustrative applications of the related instruction concepts and information.

As you review apprentice suggestions of specific current applications and examples of information and skill use in the trade, you should analyze each response in order to determine whether the learning of the key points has been achieved by the apprentice(s). You may find that the apprentices' responses indicate that they have learned something not intended in the lesson, or have learned extraneous and unimportant elements rather than the major points and concepts. When this happens, you will have an active lead to follow for possible modification of the method of instruction or instructional materials.

***Step 2: Visit Job Sites***

Periodic visits to job sites should provide you with much valid and current information on processes and products which are changing in the craft or trade. Using such information often will influence you to consider modifications of the curriculum, the adjustment of content in a lesson, and even a change in the method of presenting key points, skills and information. To the extent that time and effort can be put into job site visitations, the currency of the curriculum may be maintained with considerable confidence. Also, the practicality of the method of instruction may be noted on-site and the modification to the overall curriculum may be effected.

***Step 3: Apprentice Discussion***

Instruction must serve the needs of apprentices while providing the supervisor with the assurance that the apprentices in employment are in fact gaining basic information and skills pertinent to their specific occupations. Since each apprentice is a unique individual, you always bear a responsibility for conducting frequent discussions, counseling sessions and exchanges of information with each apprentice. During the course of those discussions you should inquire about the skills the apprentice is learning or performing on the job and how they have been able to apply their related instruction to those skills. You may find it necessary to ask about specific applications which relate to the apprentice's job activities. For example, you might ask the apprentice, "Have you found the information we went over on (topic of related instruction) helpful to you in (skill performed on the job)?" Such questions and subsequent discussions will help you to determine which of the following conditions exist:

1. The apprentice is learning and applying the related instructional content as you had planned;
2. The apprentice either does not understand the content matter or how to apply it to job activities;
3. The apprentice is using another procedure which may be either more efficient or less efficient than what was taught in related instruction.

Regardless of which of the above situations actually exists, it is extremely important that you find out so that you can modify the related instruction accordingly.

***Step 4: Quizzes and Tests***

The utilization of written quizzes and tests is always a valuable source of information for the apprenticeship instructor in estimating and in assessing the level of understanding and the acquisition of skills and knowledges by the apprentices. Unfortunately, some instructors view quizzes and tests solely as a means to rate or grade apprentices. In contrast to this, the most effective instructors see that quizzes and tests provide them with a method for monitoring and improving the effectiveness of instruction. From such quizzes and tests, you can determine the successes and limitations being achieved by the apprentices and the extent to which the knowledge and skills have been learned. Where extensive successes are noted as the results of the quizzes and tests, no changes may be needed in the lesson plan, the method of presentation or the actual curriculum content of the lesson. However, where lack of success is evident by certain of the apprentices (as revealed by the quizzes and tests), you should take immediate steps to consult with the respective apprentices concerning the difficulty. Should the consultation reveal that the method used in the presentation did not effectively present the information in a manner which the apprentice could understand and apply, you should take the necessary steps to modify the curriculum content of the lesson and probably the method of presentation of the skills and information. As the instructor, you should seek more complete and detailed information and direction from Module #9 "Evaluating Apprentice Learning." That module will provide you with a wide variety of procedures and skills in the assessment of desirable apprentice knowledges and skills.

## Example

Fred Whitney, a related subjects instructor in auto refinishing, was concerned that the illustrative examples he used in his instruction were not adequately arousing the apprentices' interest. In discussion with the apprentices, he found that they viewed the illustrations as not being real. After giving this matter some thought he developed the following strategy. Whenever he assigned problems to the apprentices, they were to solve each problem and also write a similar problem which was based on their own

on-the-job experience. This served two purposes. First, it enabled Whitney to see if the apprentices understood the principle or procedure well enough to generalize its application to another appropriate situation. Secondly, it provided Whitney with a selection of sample problems to use in sessions. When using these problems, Whitney made it a point to tell his apprentices who presented the problem to him. By doing so he was able to emphasize that the problem was a real one. He also found that the apprentices liked to know whose problem it was just to see if they knew the person.

## Self-Test Exercises

*Answer the following questions in the space provided or on separate work paper. Compare your answers with those in the Appendix of this booklet.*

1. List the procedures and/or devices which you might use during the presentation of a lesson to reassure yourself that apprentice learning is taking place.

2. Assume that you are conducting an instructor-supervised demonstration of the use of a milling machine to cut gear teeth. Describe the steps you would take with a group of three apprentices to obtain verbal feedback from each of them.

Step 1. _____

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Step 2. _____

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Step 3. _____

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# 7. Appendix

## Answers To Self-Test Exercises

*2. SKILL: Plan To Present Information In The Related Subjects Experience*

1. Regardless of exact content of your outline, you should have attended to at least 5 or 6 of the following steps:
   a. Determine appropriateness of information
   b. Determine limits of new information
   c. Note principal points to be taught as well as supporting illustrations/materials
   d. Seek out and arrange for use of appropriate equipment and instructional materials
   e. Decide on methods for presenting information
   f. Consider how you will assess the results of the session

*3. SKILL: Introduce Lesson And Provide Clear Expectations And Directions For Apprentice Activity And Outcomes*

1. Points for giving directions are:
   a. decide exactly what you want apprentices to do
   b. command attention before explaining
   c. speak clearly, loudly and in appropriate language
   d. explain object of lesson
   e. be sure that learners understand directions
   f. provide written copy of difficult directions, if necessary
2. a. The directions should be discussed before activity began to be sure that learners understand them and the object of the lesson
   b. The directions should have been discussed and posted for easy reference
3. Be certain that you attended to each of the considerations listed in question #1 of this skill

*4. SKILL: Vary Methods For Presenting Information*

1. a. Demonstration - shows how to operate/perform activity; experience; holds attention; reduces trial and error; illustrates application
   b. Discussion - share information and instructions; involve learners; consider examples/applications
   c. Role Play - activity involves learner in simulated situation; helps learners understand a problem from someone else's perspective.
   d. Lecture - controlled presentation of information; introduce information not in print;
   e. Individualized Instruction - assume individual responsibility; self-paced; assist individual needs; motivating; see progress; increase attention
2. a. demonstration
   b. lecture
   c. lecture or discussion
   d. individualized instruction

*5. SKILL: Use Instructional Aids In Presenting Information*

1. Characteristic - they must attract and focus attention
2. To determine the content of the material, the required level of understanding of apprentices, the usefulness of the materials, and to decide how to use them as related subjects instruction.
3. A projector that permits showing of images that have been prepared on transparencies. Advantages are that it is flexible; easy to use; materials can be prepared in advance or as you talk. It can be used to stress or note major points.
4. Step 1: Secure equipment; text; preview material for use; decide how to use in instruction; rehearse use in class
   Step 2: Introduce and use in instructional setting
   Step 3: Provide for questions and discussion of major points; repeat parts as necessary

*6. SKILL: Modify Instruction Based On Learner Feedback*

1. Question apprentices about examples or illustrations; ask apprentices to provide examples; quizzes;
2. Among the things you should consider are:
   a. Asking learner to paraphrase the information you presented
   b. Asking learners to offer applications and examples or illustrations from their employment that utilize the skills being taught
   c. Ask learners to demonstrate and describe the skill
   d. Give a quiz or test

## Posttest

***Directions:*** *Read the following questions and write your answers in the spaces provided. Check your answers with the suggested answers that follow the questions. If you answer at least 70 percent of the questions correctly, move on to Module #6. If not, repeat the sections of this module with which you had the most difficulty.*

1. What are the major steps in planning an instructional lesson?

2. List at least five reasons why directions are misunderstood.

3. When should written directions be provided in addition to oral directions?

4. List five different methods or procedures for providing instruction.

5. For what type of learning or skills development is role playing best suited?

6. What is the recommended final step following the presentation of information?

7. List at least four reasons for previewing audiovisual materials.

8. What are two advantages of flip charts over chalkboards?

9. List three methods for obtaining information for use in modifying instruction.

## Answers To Posttest

1. a. Determining the appropriateness of information.
   b. Determining the limits of information.
   c. Noting the points to be taught and supporting illustrations.
   d. Deciding on instructional procedures.
   e. Arranging for equipment and materials.
   f. Considering how to assess results of the session.

2. Your reasons should have included five of the following:
   a. Directions not clearly thought out before being given.
   b. Directions not heard or not heard clearly.
   c. Person receiving the directions was not listening or not paying attention.
   d. Directions included terms or languages not understood.
   e. No opportunity to get clarification of directions.
   f. Directions too complex to be remembered.
   g. Written directions not provided or available.

3. Written directions should be provided when the directions are complicated, difficult to follow or cover a series of activities.

4. Your answer should have included five of the following:
   a. Demonstration
   b. Discussion
   c. Individualized instruction
   d. Lecture
   e. Role playing
   f. Audio and visual presentations
   g. Individual or group problem solving

5. Role playing is best suited for developing interpersonal skills and increasing peoples' understanding of social behaviors.

6. The recommended final step is to summarize the key points and provide follow-on activities.

7. Your answer should have inlcuded four of the following reasons for previewing audio-visual materials:
   a. To determine the content.
   b. To determine the level of understanding/knowledge required to benefit from the material.
   c. To integrate the material into the overall lesson.
   d. To make sure it is in good condition.
   e. To note key points for further discussion.
   f. To determine its usefulness.

8. Your answer should have included two of the following:
   a. Opportunity to prepare material beforehand outside of the instructional area
   b. Opportunity to save the information for subsequent reference or use
   c. Mobility

9. Your answer should have included three of the following:
   a. Reviewing learners' responses to illustrative applications
   b. Visits to job sites
   c. Discussions with apprentices
   d. Quizzes and tests

## Answers To Posttest

1. b.
2. work processes.
3. a.
4. They are not directly observable and hence do not qualify as descriptors of work activities.
5. Data, Things, People.
6. c.
7. desired outcomes and designated target groups.
8. a, c, d.
9. On-the-job instruction best suited in job situations where knowledges and skills can (a) be learned from direct observation of job performance, (b) be learned from trial and error experience and (c) where learner errors are not overly costly.
10. Credit for previous experience may be assigned by
    a. Performance ratings.
    b. Credit for prior supervised work experience.
    c. Results of competency tests.
11. a. Locate one or more technologies likely to change in near future.
    b. Determine skills implications for present apprenticeship program.
    c. Revise work processes to account for changing skills requirements.